1999-2000 British Columbia

Annual Report
Division of Tuberculosis Control

BC Centre for Disease Control

Excellence Program

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FOREWORD

This report presents selected statistical and epidemiological information about tuberculosis in the province of British Columbia derived from the activities of the Division of Tuberculosis Control, BC Centre for Disease Control for the calendar years 1999 and 2000.

The information contained in this report is wholly derived from statistics kept by the Registry in the Division of Tuberculosis Control. The information regarding North American Aboriginals refers only to those that are registered. The care of those on reserve is administered by the Federal Government through Medical Services, Pacific Region, Health Canada who contract with the Division of Tuberculosis Control for this service. All Aboriginals living off reserve are the responsibility of the provincial Ministry of Health Services. The Division of Tuberculosis Control activities in the province of British Columbia are a centralized activity and a nominal registry of all active cases of tuberculosis is maintained in the Division. Although tuberculosis is a notifiable disease, the Division of Tuberculosis Control is informed of cases from several sources including directly from the Laboratory Services of the BC Centre for Disease Control and through Pharmacy Services of BC Centre for Disease Control which is responsible for dispensing all anti-tuberculosis medication throughout the province. These additional reporting mechanisms help to ensure the Division of Tuberculosis Control is advised of all active and suspect tuberculosis treated in the province of British Columbia. This 1999-2000 Annual Report is offered with high degree of confidence in its accuracy.

The 1999-2000 Annual Report includes details of in-patient treatment of tuberculosis patients which is not directly administered by the Division of Tuberculosis Control. The care of these patients is carried out by TB Ward, Vancouver General Hospital and Health Sciences Centre and is run by the Division of Respiratory Medicine.

R.K. ELWOOD, M.B., MRCP(UK), FRCP(C)
Provincial Director
Division of Tuberculosis Control

Executive Summary

1999

- In 1999 there were 332 cases of active tuberculosis reported in British Columbia, a 2% reduction in the number of cases reported (337) in 1998. The Provincial rate was similar to 1998 (8.3/100,000 vs. 8.4/100,000 in 1998) although remains higher than the national rate of 5.9/100,000 in both 1998 and 1999.

- 1.8% of cases previously diagnosed and treated in British Columbia reactivated compared to 4.5% for those treated outside British Columbia. Those considered to have had tuberculosis, usually based on history or x-ray, contributed 6.9% of the active cases.

- Rates for the various Health Regions vary across the province. The Simon Fraser, South Fraser Valley and Vancouver /Richmond Health Regions continue to have rates exceeding the provincial rate. The majority of cases numerically are reported from these Heath Regions (244 cases or 73%). The rates in the Downtown Eastside were 77.7 per 100,000 and 6.5 per 100,000 in the west side of Vancouver. The rate for Richmond fell considerably compared to 1998 from 22.3 per 100,000 to 7.3 per 100,000.

- For active cases, males continue to predominate, 183 males versus 149 females. The age-specific rates show a peak from age 35-44, rising again after age 55 and is higher in males.

- In 1999 there were no cases of multiple drug resistance diagnosed. Twenty cases or 6% of cases were resistant to at least one drug, with the commonest resistance being to Isoniazid.

- Rates of tuberculosis among registered Aboriginals living on and off reserve remains high at 24/100,000. Age specific rates are shown in Table 5-99.

- 83% of cases received self-administered treatment. 81% of these satisfactorily completed a course of treatment. This includes patients who either moved out of the Province or died. Excluding these patients, 94% satisfactorily completed a course of treatment. 16% of cases were placed on directly observed therapy, 88.5% of cases completed a course of treatment (those who moved or died are excluded from this analysis). 95% of those on directly observed therapy completed treatment.

- 734 patients were placed on preventive therapy for latent tuberculosis infection. The commonest reason for preventive therapy was history of contact with an active case, followed by incidental positive tuberculin reactors and evidence of inactive disease. Five percent of cases were placed on primary preventive therapy.

The completion rate for preventive therapy was just over 50% and there was no difference between self-administered treatment and fully supervised preventive therapy. The commonest cause of non-completion was poor compliance followed by drug reactions.

- 449 household contacts of respiratory tuberculosis cases were examined during 1999 resulting in a further 5 cases being diagnosed corresponding to a proportion of 1113 in 100,000 for this group. An additional 983 close non-household contacts and 2187 casual contacts of respiratory tuberculosis cases were also examined resulting in an additional 3 cases being diagnosed.

- During 1999 there were 81 patients admitted to TB Ward, Vancouver General Hospital and Health Sciences Centre, corresponding to 77 admissions and 10 re-admissions. The majority were admitted for active respiratory tuberculosis.

2000

- In 2000 there were 290 cases of active tuberculosis reported in British Columbia, a 13% reduction in the number of cases reported in 1999 (332) and a reduction in the provincial rate from 8.3 to 7/100,000 compared to 1999. These rates exceed the national rate of 5.9/100,000 in 1999.

- 3.8% of our cases for 2000 represented reactivation of patients treated in British Columbia compared to 4.1% of those treated outside B.C. and compared to 5.9% of those presumed to have tuberculosis but never previously documented.

- Rates for the various Health Regions vary across the province. The Simon Fraser, South Fraser Valley and Vancouver /Richmond Health Regions continue to have rates exceeding the Provincial rate. The majority of cases numerically are reported from these Heath Regions (221 cases or 82%). The rates in the Downtown Eastside were 58.1 per 100,000 versus 5.7 per 100,000 for the west side of Vancouver. The rate for Richmond doubled from 7.3 to 15.7 per 100,000.

- For active cases, males continue to predominate, 163 males versus 127 females. The age-specific rates show a peak from age 25-29, rising again after age 40 and higher in males.

- In 2000 there were 24 cases resistant to at least one drug and there were three cases (1%) of multiple drug resistant disease. The commonest resistance was to Isoniazid.

- Rates of tuberculosis among registered Aboriginals living on and off reserve remains high 20/100,000 for the year 2000. Age specific rates are shown in Table 5-00.

- 84% of cases were placed on self-administered treatment of which 82% completed therapy. Excluding those who moved or died or were still on therapy, 95% of those on self-administered treatment completed a satisfactory course of medication. 15% of cases were placed on directly observed, fully supervised treatment. 73.5% completed treatment. Excluding those that moved, were still on therapy or had died, 94% completed a satisfactory course of treatment.

- In 2000, 1238 patients were placed on preventive therapy for latent tuberculosis infection, representing a 69% increase compared to 1999. This was contributed to by almost doubling the number of positive reactors offered treatment, a considerable increase in contacts and primary prophylaxis and to a lesser extent, more patients with evidence of inactive disease being offered preventive therapy (Table 11). The completion rate for preventive therapy was just over 50% and there was no difference between self-administered treatment and fully supervised preventive therapy. The commonest cause of non-completion was poor compliance followed by drug reactions.

- 478 household contacts of respiratory tuberculosis cases were examined during 2000 resulting in a further 11 cases being diagnosed corresponding to a proportion of 2301 in 100,000 for this group. An additional 1142 close non-household contacts and 1439 casual contacts of respiratory tuberculosis cases were also examined resulting in an additional 6 cases being diagnosed.

- During 2000 there were 66 patients admitted to TB Ward, Vancouver General Hospital and Health Sciences Centre, corresponding to 59 admissions and 19 re-admissions. The majority were admitted for active respiratory tuberculosis.

Table 1-99
Active Cases - Summary
Cases diagnosed in
British Columbia, 1999

		%
New Active (Not known to be previously active)	278	83.7
New Active (Diagnosed -Ex-Province prior to arrival in BC)	4	1.2
New Active (Diagnosed-outside Canada prior to arrival in BC)	6	1.8
Reactivated (Previously active in BC)	6	1.8
Reactivated (Previously treated or active outside BC)	15	4.5
Presumed TB Inactive (Not previously documented active)	23	6.9
Total Active Cases	332	100 %
PROVINCIAL RATE: PER 100,000	8.3	
Sex distribution		
Male	183	55.0
Female	149	45.0
Diagnosis		
Respiratory (including Pleurisy)	234	70.0
Non-Respiratory	98	30.0
Total cases	332	100 %

Population of BC: 4,023,100

Table 1-00
Active Cases - Summary
Cases diagnosed in
British Columbia, 2000

		%
New Active (Not known to be previously active)	244	84.1
New Active (Diagnosed -Ex-Province prior to arrival in BC)	3	1
New Active (Diagnosed-outside Canada prior to arrival in BC)	3	1
Reactivated (Previously active in BC)	11	3.8
Reactivated (Previously treated or active outside BC)	12	4.1
Presumed TB Inactive (Not previously documented active)	17	5.9
Total Active Cases	290	100 %
PROVINCIAL RATE: PER 100,000	7.1	
Sex distribution		
Male	163	56.0
Female	127	44.0
Diagnosis		
Respiratory (including Pleurisy)	218	75.0
Non-Respiratory	72	25.0
Total cases	290	100 %

Population of BC: 4,067,179

Figure 1
Number of active tuberculosis cases by Health Region
British Columbia, 1998 -2000

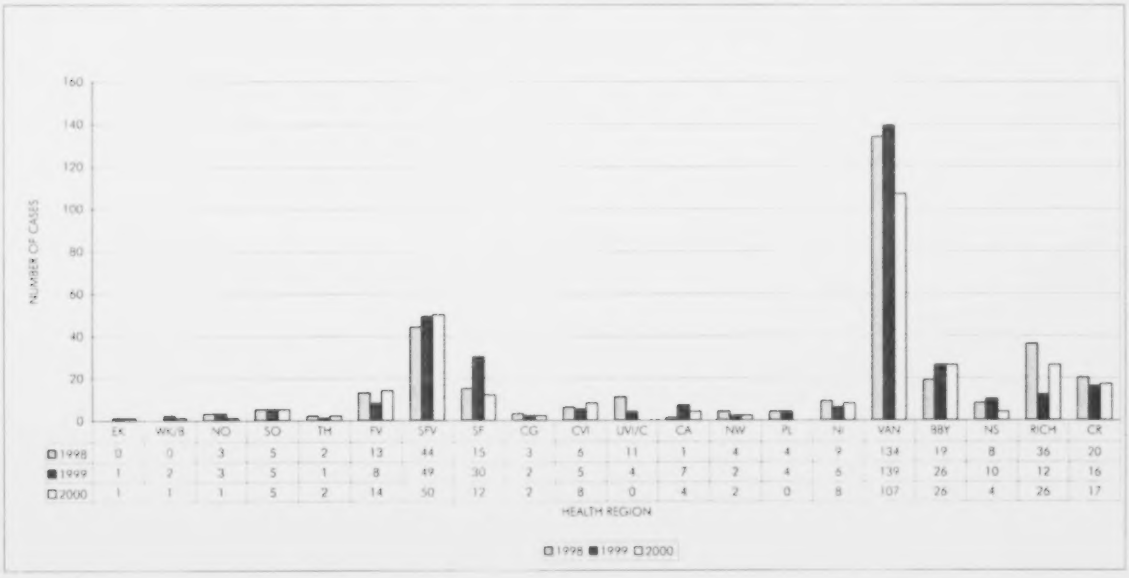


Figure 2
Tuberculosis rates by Health Region
British Columbia, 1998 -2000

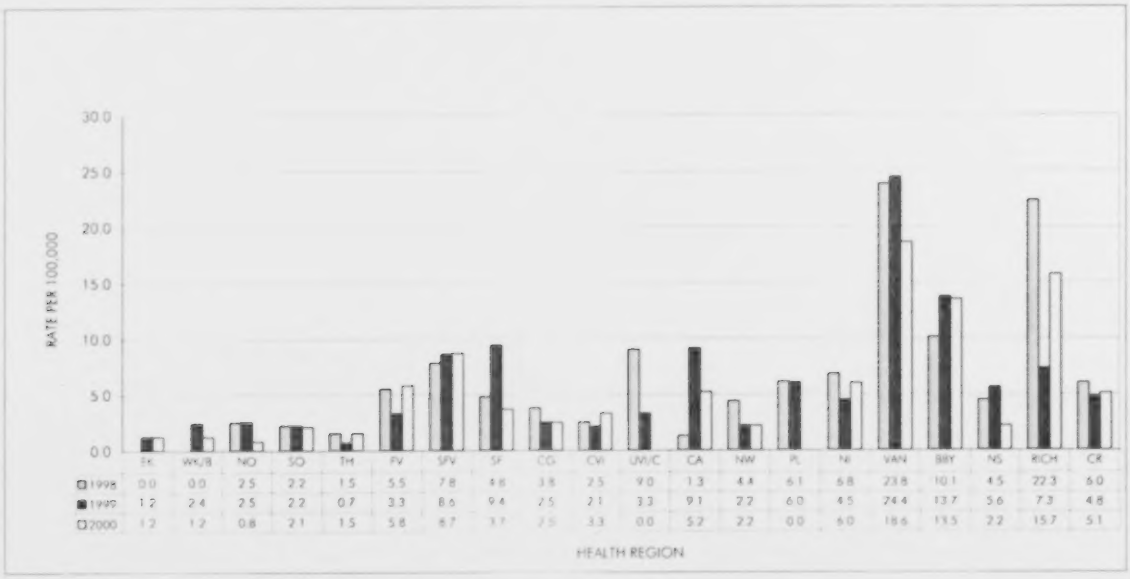


Figure 3-99
Number of cases and tuberculosis rates,
Community Health Areas, Vancouver, 1999

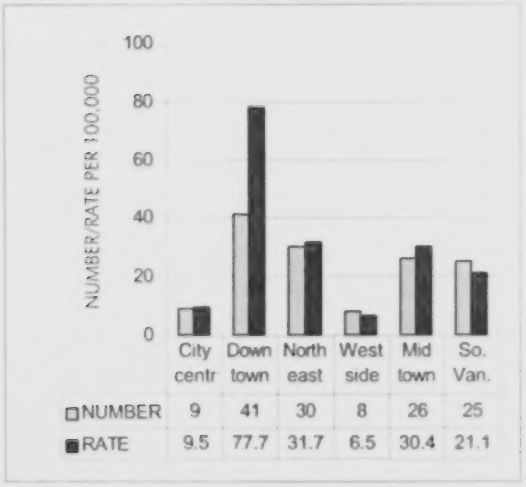
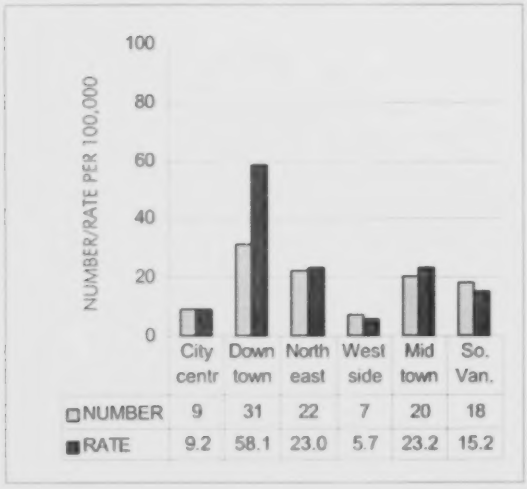
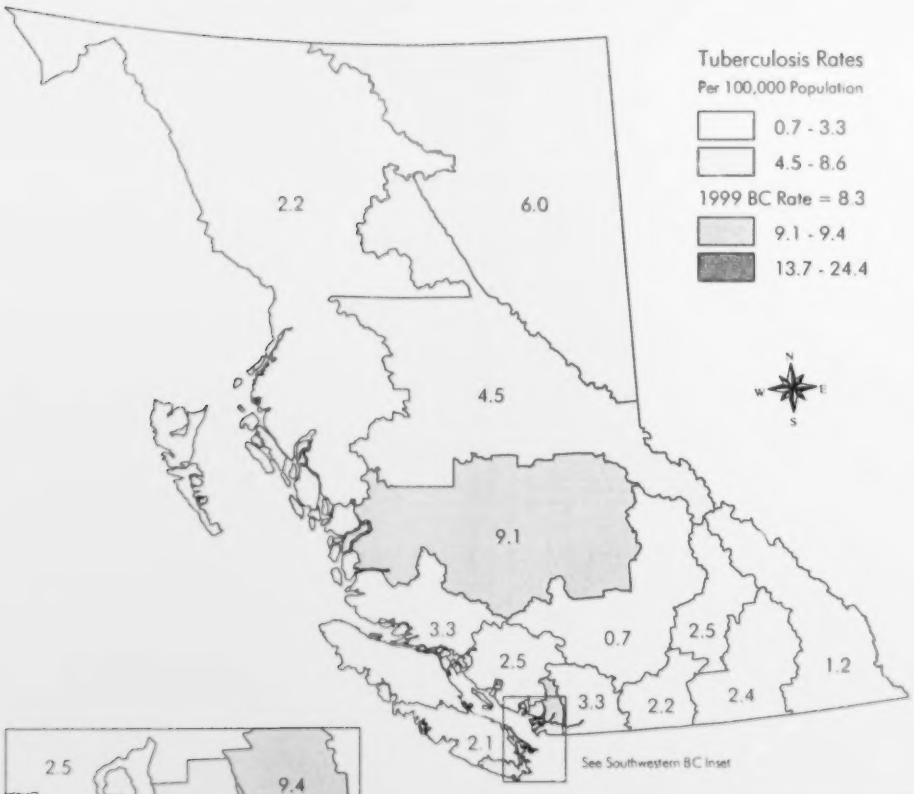
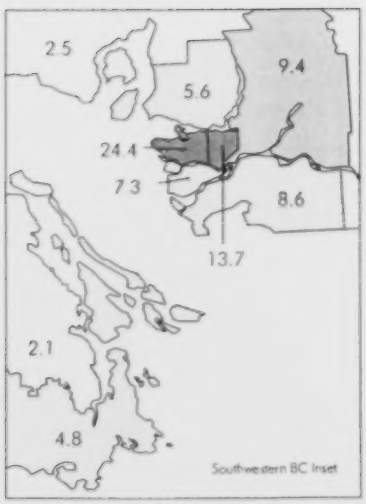


Figure 3-00
Number of cases and tuberculosis rates,
Community Health Areas, Vancouver, 2000



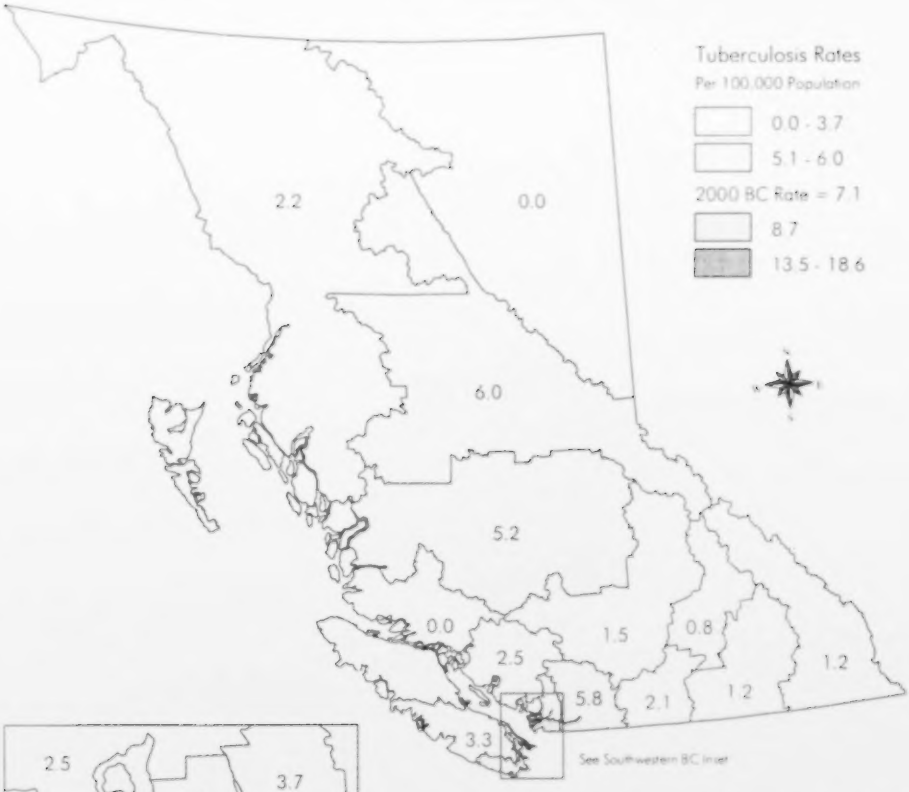
Map 1
Tuberculosis rates by Health Region
British Columbia
1999

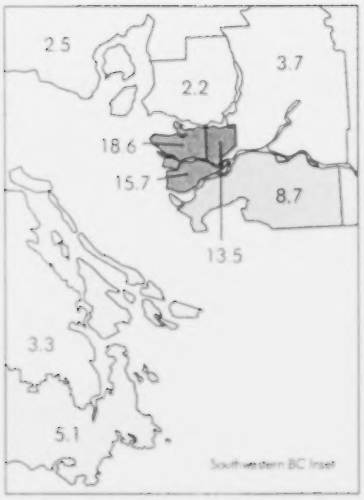




HR	Health Region	Cases	Rates
1	East Kootenay	1	1.2
2	West Kootenay - Boundary	2	2.4
3	North Okanagan	3	2.5
4	South Okanagan - Similkameen	5	2.2
5	Thompson	1	0.7
6	Fraser Valley	8	3.3
7	South Fraser Valley	49	8.6
8	Simon Fraser	30	9.4
9	Coast Garibaldi	2	2.5
10	Central Vancouver Island	5	2.1
11	Upper Island/Central Coast	4	3.3
12	Cariboo	7	9.1
13	North West	2	2.2
14	Peace Liard	4	6.0
15	Northern Interior	6	4.5
16	Vancouver	139	24.4
17	Burnaby	26	13.7
18	North Shore	10	5.6
19	Richmond	12	7.3
20	Capital	16	4.8

Map 2
Tuberculosis rates by Health Region
British Columbia
2000





HR	Health Region	Cases	Rates
1	East Kootenay	1	1.2
2	West Kootenay - Boundary	1	1.2
3	North Okanagan	1	0.8
4	South Okanagan - Similkameen	5	2.1
5	Thompson	2	1.5
6	Fraser Valley	14	5.8
7	South Fraser Valley	50	8.7
8	Simon Fraser	12	3.7
9	Coast Garibaldi	2	2.5
10	Central Vancouver Island	8	3.3
11	Upper Island/Central Coast	0	0.0
12	Caribao	4	5.2
13	North West	2	2.2
14	Peace Liard	0	0.0
15	Northern Interior	8	6.0
16	Vancouver	107	18.6
17	Burnaby	26	13.5
18	North Shore	4	2.2
19	Richmond	26	15.7
20	Capital	17	5.1

Figure 4
Tuberculosis rates among Canadian-born and foreign-born
British Columbia
1992 -2000

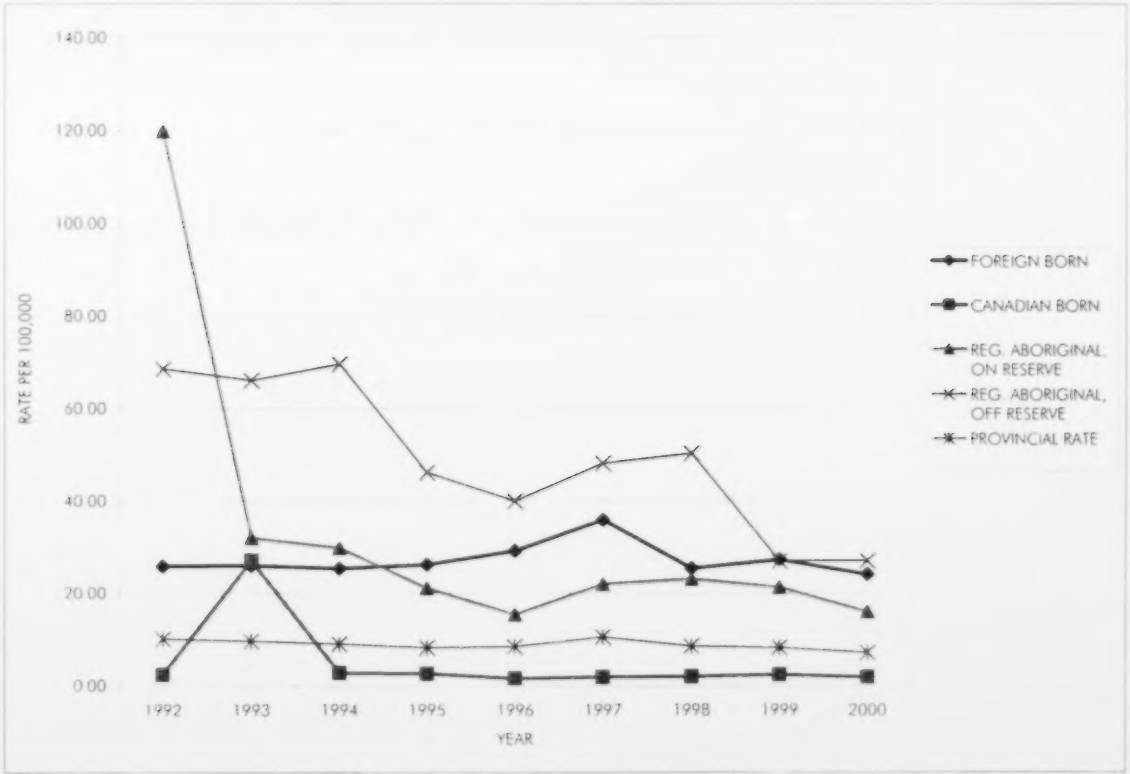


Table 2-99
Bacteriological confirmation of active tuberculosis
by anatomical site
British Columbia, 1999

	Pos smear	Pos cult only	Total	%
Respiratory				
Bacillary*	97	95	192	82.1
Non-bacillary			31	13.2
Bacillary status not known or not determined			11	4.7
Total			234	100
Non-Respiratory				
Bacillary*	19	59	78	79.6
Non-bacillary			7	7.1
Bacillary status not known or not determined			13	13.3
Total			98	100
All cases				
Bacillary*			270	81.3
Non-bacillary			38	11.4
Bacillary status not known or not determined			24	7.2
Total active cases			332	100

* Includes all types of specimen - sputum, biopsy, gastric lavage, pleural fluid, etc.

Table 2-00
Bacteriological confirmation of active tuberculosis
by anatomical site
British Columbia, 2000

	Pos smear (1)	Pos cult only	Total	%
Respiratory				
Bacillary (2)	96	89	185	84.9
Non-bacillary			23	10.6
Bacillary status not known or not determined			10	4.6
Total			218	100
Non-Respiratory				
Bacillary (2)	25	32	57	79.2
Non-bacillary			3	4.2
Bacillary status not known or not determined			12	16.7
Total			72	100
All cases				
Bacillary (2)			242	83.4
Non-bacillary			26	9.0
Bacillary status not known or not determined			22	7.6
Total active cases			290	100

(1) Includes 4 cases smear positive only.
(2) Includes all types of specimen - sputum, biopsy, gastric lavage, pleural fluid, etc.

Table 3-99
Bacteriological confirmation of active tuberculosis
by site of disease
British Columbia, 1999

Diagnosis		# tested	Bacillary (1)	(%) (2)
Respiratory	234	223	192	86.1
Non-respiratory				
Meninges & Central Nervous System	4	4	3	75.0
Intestines and Peritonium	5	4	4	100.0
Bones & Joints	12	10	9	90.0
Skin & Subcutaneous Cell Tissuse	3	3	2	66.7
Lymphatic System	51	43	39	90.7
Genito-urinary system	7	6	6	100.0
Other organs	5	4	4	100.0
Disseminated (miliary)	11	11	11	100.0
Total cases (3)	332	308	270	87.7

(1) Includes all types of specimen - sputum, gastric lavage, pleural fluid, etc.
(2) Percent of tested.
(3) Includes 10 cases in which bacteriology status was not known or not determined.

Table 3-00
Bacteriological confirmation of active tuberculosis
by site of disease
British Columbia, 2000

Diagnosis	# tested		Bacillary (1)	(%) (2)
Respiratory	217	208	184	88.5
Non-respiratory				
Meninges & Central Nervous System	3	1	1	100.0
Intestines and Peritonium	6	6	6	100.0
Bones & Joints	2	2	2	100.0
Skin & Subcutaneous Cell Tissuse	1	0	0	0.0
Lymphatic System	35	31	28	90.3
Genito-urinary system	2	1	0	0.0
Other organs	5	3	3	100.0
Disseminated (miliary)	18	17	17	100.0
Total cases (3)	289	269	241	89.6

(1) Includes all types of specimen - sputum, gastric lavage, pleural fluid, etc.
(2) Percent of tested.
(3) Includes 8 cases in which bacteriology status was not known or not determined.

Table 4
Tuberculosis cases and drug resistance
British Columbia
1999-2000

Year	Resistant to at least one drug (1)	Resistant to Isoniazid	Multiple Drug Resistance (MDR) (2)	MDR %
1999	20	16	0	0.0
2000	24	18	3	1.0

(1) Includes resistance to Isoniazid, Rifampin, Ethambutol, Pyrazinamide, Streptomycin.
(2) MDR = resistance to Isoniazid and Rifampin.

Table 5-99
Incidence of active tuberculosis by age group, gender, and bacillary status
British Columbia, 1999

	Males				Females				Total			
	Bacillary cases		All Male cases		Bacillary cases		All Female cases		Bacillary cases		All cases	
Age group		Rate		Rate		Rate		Rate		Rate		Rate
0 - 14	3	0.8	5	1.3	5	1.4	9	2.5	8	1.1	14	1.9
15 - 24	12	4.4	14	5.2	12	4.6	16	6.1	24	4.5	30	5.6
25 - 34	12	4.0	18	6.0	15	5.1	22	7.5	27	4.6	40	6.8
35 - 44	37	10.6	39	11.2	27	7.7	31	8.9	64	9.2	70	10.0
45 - 54	21	7.3	23	8.0	11	3.8	16	5.6	32	5.6	39	6.8
55 - 64	21	11.7	23	12.8	10	5.5	16	8.8	31	8.6	39	10.8
65 - 74	23	16.8	29	21.2	15	10.2	18	12.3	38	13.4	47	16.6
75 & over	26	28.2	32	34.8	20	14.0	21	14.7	46	19.6	53	22.5
Total	155	7.8	183	9.2	115	5.7	149	7.4	270	6.7	332	8.3

Rates per 100,000 population

Table 5-00
Incidence of active tuberculosis by age group, gender, and bacillary status
British Columbia, 2000

	Males				Females				Total			
	Bacillary cases		All Male cases		Bacillary cases		All Female cases		Bacillary cases		All cases	
Age group		Rate		Rate		Rate		Rate		Rate		Rate
0 - 14	1	0.3	6	1.6	0	0.0	2	0.6	1	0.1	8	1.1
15 - 24	17	6.2	19	6.9	11	4.2	13	4.9	28	5.2	32	5.9
25 - 34	27	9.3	31	10.6	24	8.3	27	9.3	51	8.8	58	10.0
35 - 44	16	4.5	20	5.7	12	3.4	18	5.1	28	4.0	38	5.4
45 - 54	22	7.3	23	7.6	19	6.3	23	7.6	41	6.8	46	7.6
55 - 64	24	12.9	27	14.5	2	1.1	6	3.2	26	6.9	33	8.8
65 - 74	9	6.5	10	7.2	13	8.8	15	10.2	22	7.7	25	8.8
75 & over	24	25.0	27	28.2	22	14.8	23	15.5	46	18.9	50	20.5
Total	140	6.9	163	8.1	103	5.0	127	6.2	243	6.0	290	7.1

Rates per 100,000 population

Table 6-99
Contributions of reactivations to total active tuberculosis cases by age group
British Columbia, 1999

Age group	0-24	25-44	45-64	65+	Total
Total active cases	48	110	81	93	332
Reactivations:					
Reactivations 1	0 (0%)	4 (3.6%)	7 (8.6%)	11 (11.8%)	22 (6.6%)
Reactivations 11	0 (0%)	5 (4.5%)	6 (7.4%)	12 (12.9%)	23 (6.9%)
Total Reactivations	0 (0%)	9 (8.2%)	13 (16.0%)	23 (24.7%)	45 (13.6%)

Reactivations 1: Derived from inactive tuberculosis cases (previously documented active).
Reactivations 11: Derived from presumed pulmonary tuberculosis, inactive (not previously documented active tuberculosis cases).

Table 6-00
Contributions of reactivations to total active tuberculosis cases by age group
British Columbia, 2000

Age group	0-24	25-44	45-64	65+	Total
Total active cases	43	99	77	71	290
Reactivations:					
Reactivations 1	2 (4.7%)	7 (7.1%)	6 (7.8%)	8 (11.3%)	23 (7.9%)
Reactivations 11	0 (0%)	2 (2.0%)	5 (6.5%)	10 (14.1%)	17 (5.9%)
Total Reactivations	2 (4.7%)	9 (9.1%)	11 (14.3%)	18 (25.4%)	40 (13.8%)

Reactivations 1: Derived from inactive tuberculosis cases (previously documented active).
Reactivations 11: Derived from presumed pulmonary tuberculosis, inactive (not previously documented active tuberculosis cases).

Table 7-99
Principal diagnosis of active tuberculosis
among non-aboriginal and Registered Aboriginals
(on and off reserve)
British Columbia, 1999

	Non-Aboriginals (1)		Registered Aboriginals	
		(%)		(%)
Respiratory	212	69.1	22	84.6
Non Respiratory				
Meninges/Central Nervous System	5	1.6	0	0.0
Intestines & Peritonium	5	1.6	0	0.0
Bones & Joints	12	3.9	0	0.0
Skin & Subcutaneous Cell Tissue	3	1.0	0	0.0
Lymphatic System	50	16.3	1	3.8
Genito Urinary System	6	2.0	1	3.8
Multiple Sites & Other Organs	4	1.3	1	3.8
Disseminated /Miliary	10	3.3	1	3.8
TOTAL	307	100	26	100

1 Includes 4 non-status Aboriginals

Table 7-00
Principal diagnosis of active tuberculosis
among non-aboriginal and Registered Aboriginals
(on and off reserve)
British Columbia, 2000

	Non-Aboriginals (1)	(%)	Registered Aboriginals	(%)
Respiratory	200(2)	74.6	18	81.8
Non Respiratory				
Meninges/Central Nervous System	3	1.1	0	0.0
Intestines & Peritonium	5	1.9	1	4.5
Bones & Joints	2	0.7	0	0.0
Skin & Subcutaneous Cell Tissue	1	0.4	0	0.0
Lymphatic System	35	13.1	0	0.0
Genito Urinary System	2	0.7	0	0.0
Multiple Sites & Other Organs	5	1.9	0	0.0
Disseminated /Miliary	15	5.6	3	13.6
TOTAL	268	100	22	100

1 Includes 4 non-status Aboriginals
2 Includes 1 case (Metis) with a normal x-ray and a positive bacillary status

Table 8
Previous diagnoses or radiological findings in active cases diagnosed
British Columbia
1999-2000

	1999		2000	
		%		%
REACTIVATION 1				
Inactive tuberculosis (Previously documented active episode(s))	22	6.6	23	7.9
REACTIVATION 11				
Presumed tuberculosis inactive	23	6.9	17	5.9
Sub-total	45	13.6	40	13.8
OTHER PRE-EXISTING CHEST X-RAY ABNORMALITY				
Pulmonary Fibrosis (Localized and Diffuse)	2	0.6	1	0.3
Old pleurisy and other pleural changes	3	0.9	6	2.1
Hilar Calcification	3	0.9	0	0.0
Other conditions	3	0.9	1	0.3
Atypical	0	0.0	1	0.0
Abnormality-not stated	8	2.4	3	1.0
Sub-total	19	5.7	12	4.1
NO PRE-EXISTING CHEST X-RAY ABNORMALITY	44	13.3	27	9.3
NO PREVIOUS CHEST X-RAY TAKEN OR AVAILABLE	224	67.5	211	72.8
TOTAL CASES	332	100	290	100

Table 9-99
Place of treatment of active tuberculosis cases
by diagnosis and principal bacteriological findings,
British Columbia, 1999

Diagnosis	Domicillary		Hospital, TB ward		General Hospitals *		Total	
Respiratory		%		%		%		%
Positive smear and culture	52	54.7	20	21.1	23	24.2	95	100
Positive culture only	70	79.5	6	6.8	12	13.6	88	100
Negative smear and culture	23	88.5	0	0.0	3	11.5	26	100
Not examined	7	100.0	0	0.0	0	0.0	7	100
Pathlogy	8	80.0	1	10.0	1	10.0	10	100
Sub total	160	70.8	27	11.9	39	17.3	226	100
Non-respiratory								
Positive smear and culture	7	63.6	0	0.0	4	36.4	11	100
Positive culture only	50	89.3	0	0.0	6	10.7	56	100
Negative smear and culture	3	100.0	0	0.0	0	0.0	3	100
Not examined	3	100.0	0	0.0	0	0.0	3	100
Pathlogy	16	94.1	0	0.0	1	5.9	17	100
Sub total	79	87.8	0	0.0	11	12.2	90	100
Total	239	75.6	27	8.5	50	15.8	316	100

Note: In addition to the above total 14 persons were diagnosed at death.
In addition to the above total 2 persons were diagnosed receiving no treatment.

* Treatment had been started in other hospitals in British Columbia or in other wards than the designated TB ward.

Table 9-00
Place of treatment of active tuberculosis cases by diagnosis and principal bacteriological findings British Columbia, 2000

Diagnosis	Domiciliary		Hospital, TB ward		General Hospitals *		Total	
Respiratory		%		%		%		%
Positive smear and culture	56	60.9	17	18.5	19	20.7	92	100
Positive culture only	74	89.2	3	3.6	6	7.2	83	100
Negative smear and culture	19	95.0	0	0.0	1	5.0	20	100
Not examined	6	100.0	0	0.0	0	0.0	6	100
Pathlogy	6	100.0	0	0.0	0	0.0	6	100
Sub total	161	77.8	20	9.7	26	12.6	207	100
Non-respiratory								
Positive smear and culture	18	75	3	12.5	3	12.5	24	100
Positive culture only	25	83.3	1	3.3	4	13.3	30	100
Negative smear and culture	1	100.0	0	0.0	0	0.0	1	100
Not examined	1	100.0	0	0.0	0	0.0	1	100
Pathlogy	11	91.7	0	0.0	1	8.3	12	100
Sub total	56	82.4	4	5.9	8	11.8	68	100
Total	217	78.9	24	8.7	34	12.4	275	100

Note: In addition to the above total 11 persons were diagnosed at death.
In addition to the above total 4 persons were diagnosed receiving no treatment.

* Treatment had been started in other hospitals in British Columbia or in other wards than the designated TB ward.

Table 10-99
Completion of therapy of
active tuberculosis diagnosed in 1998*
British Columbia

		%	
Number Active	**337**		
Cases treated	**313**	92.9	(of cases)
Self-administered treatment	**261**	83.4	(of treated)
Completed	211	80.8	(of self-administered)
Reasons for non-completion			
Drug reaction	5	1.9	*
Moved	25	9.6	*
Death	12	4.6	*
Non-compliant/Lost	4	1.5	*
Other **	4	1.5	*
Supervised Treatment	**52**	16.6	(of treated)
Completed	46	88.5	(of supervised)
Reasons for non-completion			
Moved	3	5.8	*
Death	1	1.9	*
Non-compliant/Lost /No Data Provided	2	3.8	*

** Treatment was stopped for reason specific to the patient's care (eg. pregnancy, mentally challenged, surgery intervention).

* and reported in 2001. Standard treatment for pulmonary tuberculosis requires at least 120 days of drug therapy which need not be consecutive.

Table 10-00
Completion of therapy of
active tuberculosis diagnosed in 1999*
British Columbia

		%	
Number Active	**332**		
Cases treated	**315**	94.9	(of cases)
Self-administered treatment	**266**	84.4	(of treated)
Completed	218	82.0	(of self-administered)
Reasons for non-completion			
Still on therapy	7	2.6	"
Moved	13	4.9	"
Death	17	6.4	"
Non-compliant/Lost	10	3.8	"
Other **	1	0.4	"
Supervised Treatment	**49**	15.6	(of treated)
Completed	36	73.5	(of supervised)
Reasons for non-completion			
Still on therapy	4	8.2	"
Moved	1	2.0	"
Death	6	12.2	"
Non-compliant/Lost	2	4.1	"

** Treatment was stopped for reason specific to the patient's care (eg. pregnancy, mentally challenged, surgery intervention).

* and reported in 2001. Standard treatment for pulmonary tuberculosis requires at least 120 days of drug therapy which need not be consecutive.

Table 11
Indication for preventive therapy
started in 1999, 2000
British Columbia

Indication for therapy	1999 #	1999 %	2000 #	2000 %
Positive Tbn Reactors	224	30.5	444	35.9
Convertors	51	6.9	69	5.6
Contacts	248	33.8	469	37.9
HIV Positive	17	2.3	7	0.6
Primary prophylaxis	37	5.0	68	5.5
Evidence of inactive tuberculosis	150	20.4	175	14.1
Miscellaneous	7	1.0	6	0.5
Total	734	100	1238	100

Table 12-99
Completion of preventive therapy
started in 1998*
British Columbia

		%	
Started chemoprophylaxis	**793**		
Self-administered treatment	**694**	87.5	(of started)
Completed	379	54.6	(of self-administered)
Reasons for non-completion			
Drug reaction	91	13.1	"
Moved	36	5.2	"
Death	9	1.3	"
Non-compliant/Lost	112	16.1	"
Other **	67	9.7	"
Supervised Treatment	**99**	12.5	(of started)
Completed	52	52.5	(of supervised)
Reasons for non-completion			
Drug reaction	16	16.2	"
Moved	3	3.0	"
Non-compliant/Lost	20	20.2	"
Other **	8	8.1	"

** Chemoprophylaxis was stopped for reason specific to the patient's care (eg. pregnancy, mentally challenged, surgery intervention).

* and reported in 2001. Standard preventive therapy for latent tuberculosis infection requires 270 days of therapy which need not be consecutive.

Table 12-00
Completion of preventive therapy
started in 1999*
British Columbia

		%	
Started chemoprophylaxis	**731**		
Self-administered treatment	**683**	93.4	(of started)
Completed	407	59.6	(of self-administered)
Reasons for non-completion			
Drug reaction	92	13.5	"
Moved	32	4.7	"
Death	6	0.9	"
Non-compliant/Lost	97	14.2	"
Other **	49	7.2	"
Supervised Treatment	**48**	6.6	(of started)
Completed	24	50.0	(of supervised)
Reasons for non-completion			
Drug reaction	6	12.5	"
Moved	3	6.3	"
Death	1	2.1	"
Non-compliant/Lost	13	27.1	"
Other **	1	2.1	"

** Chemoprophylaxis was stopped for reason specific to the patient's care (eg. pregnancy, mentally challenged, surgery intervention).

* and reported in 2001. Standard preventive therapy for latent tuberculosis infection requires 270 days of therapy which need not be consecutive.

Table 13
Active tuberculosis
agency providing initial investigation
leading to the diagnosis
British Columbia, 1999-2000

	1999	%	2000	%
Division of TB Control	61	18.4	47	16.2
TB Services to Aboriginals	0	0.0	2	0.7
General Hospitals	201	60.5	169	58.3
Private Radiologists	45	13.6	55	19.0
Private Physician	4	1.2	0	0.0
Mental Health Services	1	0.3	0	0.0
Ex-Province	11	3.3	7	2.4
Provincial jails	1	0.3	3	1.0
Notified on death	8	2.4	7	2.4
Total	332	100	290	100

Table 14-99
Mortality in cases of active tuberculosis,
death while on treatment or notified after death
British Columbia
1999

	TB principal cause of death	TB contributing cause of death	TB not related to death	TB contribution to death unknown	Total
Notified after death (diagnosis at or after death)	0	4	4	0	8
Diagnosed and notified before death*	4	8	18	2	32
Total	4	12	22	2	40

* Diagnosed active and may have received treatment prior to death.

Table 14-00
Mortality in cases of active tuberculosis,
death while on treatment or notified after death
British Columbia
2000

	TB principal cause of death	TB contributing cause of death	TB not related to death	Total
Notified after death (diagnosis at or after death)	1	4	2	7
Diagnosed and notified before death*	4	4	7	15
Total	5	8	9	22

* Diagnosed active and may have received treatment prior to death.

Table 15-99
Tuberculosis mortality by country of birth
British Columbia
1999

	TB principal cause of death	TB contributing cause of death	TB not related to death	TB contribution to death unknown	Total
Canadian born					
Aboriginals	3	3	3	0	9
Others	0	1	4	0	5
Foreign born	0	1	12	1	14
Unknown	1	7	3	1	12
Total	4	12	22	2	40

Table 15-00
Tuberculosis mortality by country of birth
British Columbia
2000

	TB principal cause of death	TB contributing cause of death	TB not related to death	Total
Canadian born				
Aboriginals	1	2	1	4
Others	0	0	1	1
Foreign born	2	2	4	8
Unknown	2	4	3	9
Total	5	8	9	22

Table 16-99
Tuberculosis mortality
by age, gender, and cause of death
British Columbia
1999

Age	Gender	TB principal cause of death	TB contributing cause of death	TB not related to death	TB contribution to death unknown	Total
0 - 24	M	0	0	0	0	0
	F	0	0	0	0	0
25 - 44	M	1	1	3	0	5
	F	0	2	2	0	4
45 - 64	M	1	2	3	0	6
	F	1	0	2	0	3
65 - 84	M	1	2	6	2	11
	F	0	3	2	0	5
85 & over	M	0	1	4	0	5
	F	0	1	0	0	1
Total	M	3	6	16	2	27
	F	1	6	6	0	13

Table 16-00
Tuberculosis mortality
by age, gender, and cause of death
British Columbia
2000

Age	Gender	TB principal cause of death	TB contributing cause of death	TB not related to death	Total
0 - 24	M	0	0	0	0
	F	0	0	0	0
25 - 44	M	1	0	3	4
	F	1	1	0	2
45 - 64	M	1	3	0	4
	F	0	0	0	0
65 - 84	M	0	1	3	4
	F	2	2	3	7
85 & over	M	0	1	0	1
	F	0	0	0	0
Total	M	2	5	6	13
	F	3	3	3	9

Table 17-99
Tuberculosis mortality
by diagnosis and cause of death
British Columbia
1999

	TB principal cause of death	TB contributed to cause of death	TB not related to death	TB contribution to death unknown	Total
Respiratory	2	6	16	2	26
Non-respiratory					
Lymphatic System			2		2
Intestines & Peritoneum		1			1
Bones & Joints			1		1
Genito-urinary System		1	1		2
Multiple Sites & Other Organs		1	1		2
Disseminated (Miliary)	2	3	1		6
Total	4	12	22	2	40

Table 17-00
Tuberculosis mortality
by diagnosis and cause of death
British Columbia
2000

	TB principal cause of death	TB contributed to cause of death	TB not related to death	Total
Respiratory	2	6	6	14
Non-respiratory				
Lymphatic System			1	1
Meninges & Central Nervous System			1	1
Intestines & Peritoneum		1		1
Disseminated (Miliary)	3	1	1	5
Total	5	8	9	22

Table 18-99
Incidence of active tuberculosis among Registered Aboriginals
(on and off reserve) by age group and gender
British Columbia
1999

Age group:	MALES	Rate	FEMALES	Rate	TOTAL	Rate
0 - 14	1	6.5	0	0.0	1	3.3
15 - 24	0	0.0	1	10.7	1	5.3
25 - 34	0	0.0	2	20.9	2	10.5
35 - 44	4	46.2	6	61.2	10	54.2
45 - 54	3	58.7	1	16.8	4	36.2
55 - 64	2	72.9	0	0.0	2	32.7
65 & over	4	180.8	2	67.8	6	116.3
Total	14	26.2	12	21.7	26	23.9

Figure 5-99
Rate of active tuberculosis among Registered Aboriginals
(on and off reserve) by age group
British Columbia, 1999

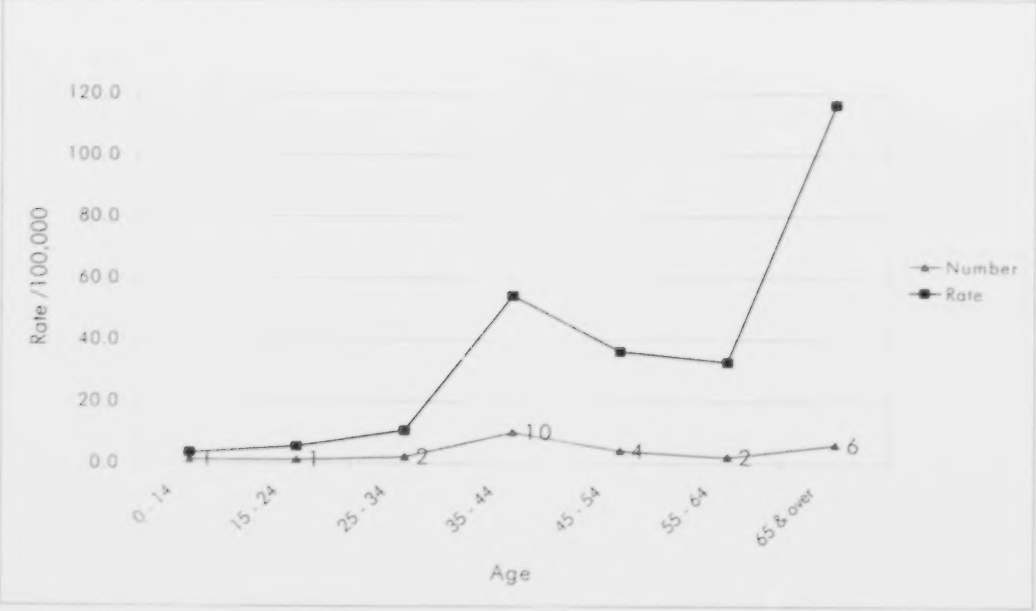


Table 18-00
Incidence of active tuberculosis among Registered Aboriginals
(on and off reserve) by age group and gender
British Columbia
2000

Age group:	MALES	Rate	FEMALES	Rate	TOTAL	Rate
0 - 14	0	0.0	1	6.9	1	3.4
15 - 24	3	30.4	3	31.6	6	31.0
25 - 34	1	10.6	2	21.2	3	15.9
35 - 44	4	44.9	2	19.8	6	31.6
45 - 54	2	37.0	1	15.9	3	25.7
55 - 64	2	69.7	0	0.0	2	31.0
65 & over	1	43.1	0	0.0	1	18.6
Total	13	24.0	9	16.0	22	19.9

Figure 5-00
Rate of active tuberculosis among Registered Aboriginals
(on and off reserve) by age group
British Columbia, 2000

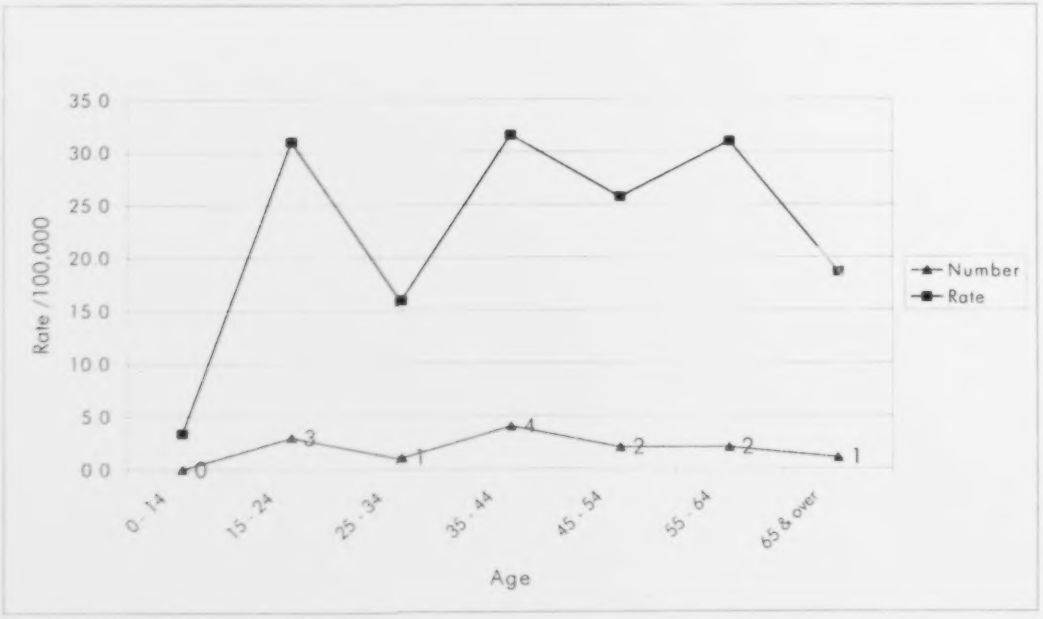


Table 19
Active tuberculosis by Health Region
of residence for Registered Aboriginals (on and off reserve)
British Columbia
1999-2000

Health Authority	1999	2000
East Kootenay	0	0
West Kootenay/Boundary	0	0
North Okanagan	0	0
South Okanagan/Similkameen	2	1
Thompson	0	0
Fraser Valley	1	0
South Fraser Valley	0	0
Simon Fraser	1	0
Coast Garibaldi	0	0
Central Vancouver Island	0	1
Upper Island/Central Coast	1	0
Cariboo	1	0
North West	0	0
Peace Liard	1	0
Northern Interior	0	0
Vancouver City	10	10
Burnaby	0	0
North/West Vancouver	1	0
Richmond	0	0
Capital	0	1
South Pacific Zone	3	3
North Pacific Zone	5	6
Total	26	22

Table 20
BCG vaccinations
given by Aboriginal Services
British Columbia
1994 - 2000

Age: / Year:	0-89 days	> 90 days	Adverse reactions
1994	482	54	4
1995	451	23	3
1996	474	13	5
1997	374	15	5
1998	321	7	3
1999	279	6	5
2000	228	4	4

Table 21
Yield of contact tracing
Type of case: Respiratory
Type of contact: Household and Close non-household
British Columbia, 1999-2000

	Household	Active cases		Close non-household	Active cases	
		#	%		#	%
1999	449	5	1.1	983	2	0.2
2000	478	11	2.3	1142	4	0.4

Table 22-99
Yield of contact tracing
by bacillary status of source case
British Columbia
1999(1)

Source bacteriology	RESPIRATORY												NON-RESPIRATORY		
	Household contact			Close-non-household contact			Casual contact			Total Respiratory Contacts			Household contact		
	Total contacts	N =active	%	Total contacts	N =active	%	Total contacts	N =active	%	Total contacts	N =active	Proportion(3)	Total contacts	N =active	%
Positive Smear & Culture															
Total contacts	277	4	1.4	803	1	0.1	2072	0	0.0	3152	5	158.6	31	0	0.0
Tuberculin positive contacts(2)	113	3	2.7	232	1	0.4	586	0	0.0	931	4	429.6	11	0	0.0
Positive Culture only															
Total contacts	154	0	0.0	167	1	0.6	106	1	0.9	427	2	468.4	58	0	0.0
Tuberculin positive contacts(2)	67	0	0.0	58	1	1.7	24	1	4.2	149	2	1342.3	22	0	0.0
Negative Smear & Culture or no specimens submitted															
Total contacts	18	1	5.6	13	0	0.0	9	0	0.0	40	1	2500.0	5	0	0.0
Tuberculin positive contacts(2)	4	1	25.0	3	0	0.0	0	0	0.0	7	1	14285.7	1	0	0.0
Total	449	5	1.1	983	2	0.2	2187	1	0.0	3619	8	221.1	94	0	0.0

Notes: (1) Active diagnosis in contacts up to June 30 of following year.
(2) includes persons with a tuberculin reaction of 10mm or greater.
(3) Proportion per 100,000

Table 22-00
Yield of contact tracing
by bacillary status of source case
British Columbia
2000(1)

Source bacteriology	RESPIRATORY											NON-RESPIRATORY		
	Household contact			Close-non-household contact			Casual contact			Total Respiratory Contacts			Household contact		
	Total contacts	N = active	%	Total contacts	N = active	%	Total contacts	N = active	%	Total contacts	N = active	Proportion(3)	Total contacts	N = active	%
Positive Smear & Culture															
Total contacts	315	9	2.9	974	4	0.4	1333	2	0.2	2622	15	572.1	29	0	0.0
Tuberculin positive contacts(2)	139	9	6.5	263	3	1.1	249	2	0.8	651	14	2150.5	5	0	0.0
Positive Culture only															
Total contacts	146	1	0.7	161	0	0.0	103	0	0.0	410	1	243.9	36	0	0.0
Tuberculin positive contacts(2)	55	1	1.8	49	0	0.0	20	0	0.0	124	1	806.5	13	0	0.0
Negative Smear & Culture or no specimens submitted(4)															
Total contacts	17	1	5.9	7	0	0.0	3	0	0.0	27	1	3703.7	6	0	0.0
Tuberculin positive contacts(2)	7	1	14.3	4	0	0.0	1	0	0.0	12	1	8333.3	5	0	0.0
Total	478	11	2.3	1142	4	0.4	1439	2	0.1	3059	17	555.7	71	0	0.0

Notes: (1) Active diagnosis in contacts up to June 30 of following year.
(2) includes persons with a tuberculin reaction of 10mm or greater
(3) Proportion per 100,000
(4) Plus there are 2 additional active cases in contacts where source diagnosis and bacteriology status could not be obtained.

Table 23-99
Total admissions/re-admissions
to TB Ward, Vancouver General Hospital & Health Sciences Centre
by diagnosis
British Columbia, 1999

	First Admissions	Re-admissions	Total	% Re-admission
Active tuberculosis				
Respiratory	50	7	57	12
Non Respiratory	2	1	3	
Suspect TB	16	1	17	
Mycobacteria other than Tuberculosis	4	0	4	
Other Conditions	5	1	6	
Total	77	10	87	11

Note: The admissions/re-admissions represent 81 patients.

Table 23-00
Total admissions/re-admissions
to TB Ward Vancouver General Hospital & Health Sciences Centre
by diagnosis
British Columbia, 2000

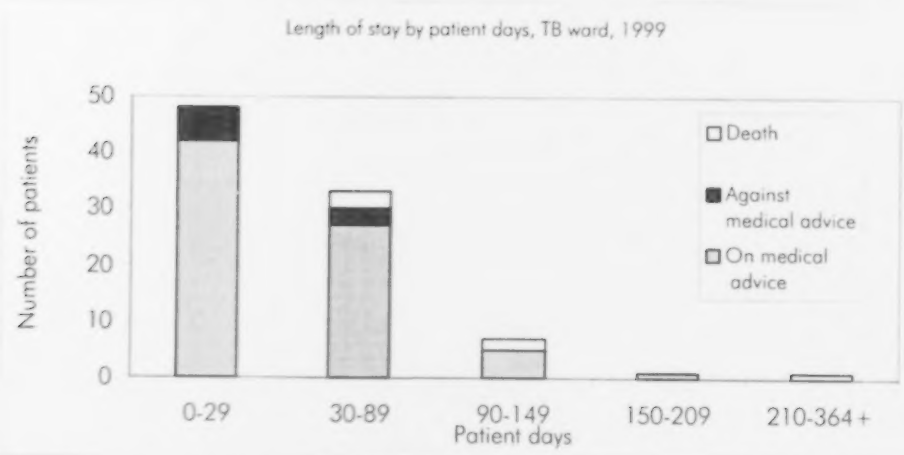
	First Admissions	Re-admissions	Total	% Re-admission
Active tuberculosis				
Respiratory	47	17	64	27
Non Respiratory	0	0	0	
Suspect TB	5	0	5	
Mycobacteria other than Tuberculosis	4	1	5	
Other Conditions	3	1	4	
Total	59	19	78	24

Note: The admissions/re-admissions represent 66 patients.

Table 24-99
Length of stay
TB Ward Vancouver General Hospital & Health Sciences Centre
by gender and type of discharge
British Columbia, 1999

		Length of stay					
	Mos.	Under 1	1 - 2	3 - 4	5 - 6	7 - 11	Total
Type of discharge	Days	0 -29	30 - 89	90 - 149	150 - 209	210 - 364+	
On Medical advice	M	26	15	1	1	0	43
	F	16	12	4	0	0	32
Against medical advice	M	4	2	0	0	0	6
	F	2	1	0	0	0	3
Death	M	0	3	1	0	1	5
	F	0	0	1	0	0	1
Total		48	33	7	1	1	90

Figure 6-99
Length of stay
TB Ward Vancouver General Hospital & Health Sciences Centre
by type of discharge
British Columbia, 1999

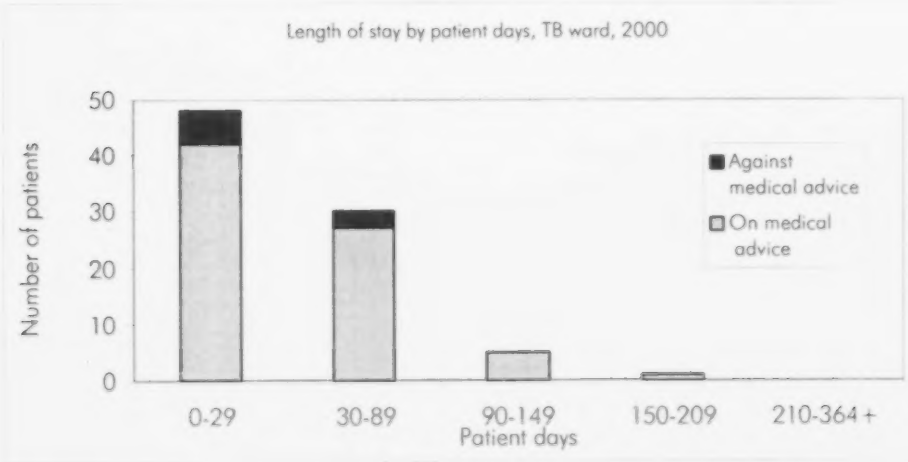


The 90 discharges spent a total of 3,387 patient days on the TB ward. The average stay was 38 days. The majority of these were for active respiratory tuberculosis.

Table 24-00
Length of stay
TB Ward Vancouver General Hospital and Health Sciences Centre
by gender and type of discharge
British Columbia, 2000

		Length of stay					
	Mos.	Under 1	1 - 2	3 - 4	5 - 6	7 - 11	Total
	Days	0 -29	30 - 89	90 - 149	150 - 209	210 - 364+	
Type of discharge							
On Medical advice	M	15	25	5	1	0	46
	F	12	4	0	0	0	16
Against medical advice	M	4	3	0	0	0	7
	F	1	3	0	0	0	4
Total		32	35	5	1	0	73

Figure 6-00
Length of stay
TB Ward Vancouver General Hospital & Health Sciences Centre
by type of discharge
British Columbia, 2000



The 73 discharges spent a total of 2,982 patient days on the TB ward. The average stay was 41 days. The majority of these were for active respiratory tuberculosis.

Sources

1. Figure 4: Population projections for Canadian born, foreign born, Aboriginal population (total) from Statistics Canada, 1996 Census. www.statcan.ca

2. Aboriginal on reserve and off reserve populations and age groups are from Registered Indian Population by Sex and Residence, Information Management Branch, Department of Indian Affairs and Northern Development, Government of Canada, 1999, 2000. www.inac.gc.ca

3. Other population projections are from Health Data Warehouse - Ministry of Health Services, Government of British Columbia. HDW release date: July 2000.

4. National rates are provided by Health Canada - Population and Public Health Branch. Personal communication and cythera.ic.gc.ca/dsol/ndis/c_prv_e.html

5. Health Region Boundaries are from BC STATS, Ministry of Management Services, Government of British Columbia.